

SECTION 0 – SCOPE OF PROJECT

This project includes but is not limited to optional construction including:

- clearing;
- grubbing;
- right-of-way debris disposal;
- excavation and/or embankment to subgrade;
- landing construction;
- acquisition and application of rock;
- grass seeding.

This project also includes but is not limited to reconstruction including:

- brushing right-of-way;
- clearing existing excavation and embankment slopes;
- grubbing existing excavation and embankment slopes;
- right-of-way debris disposal;
- cleaning ditches;
- grading and shaping existing road surface and turnouts;
- compaction of road surface;
- acquisition and application of rock;
- grass seeding.

This project also includes but is not limited to pre-haul maintenance including:

- cleaning ditches;
- grading and shaping existing road surface and turnouts;
- compaction of road surface.

This project also includes but is not limited to abandonment including:

- light abandonment.

SECTION 1 - GENERAL CLAUSES

1.1-1
Clauses in this plan apply to all construction, reconstruction, pre-haul maintenance, or abandonment including landings unless otherwise noted.

1.1-2
Reconstruction or pre-haul maintenance of the following roads is required. All roads shall be reconstructed or pre-haul maintained on the State's location and in accordance with this Road Plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
D-3000	0+00 to 47+44	Pre-haul maintenance
D-3000	47+44 to 50+83	Reconstruction
D-3500	0+00 to 56+38	Reconstruction

1.1-2.1
Abandonment of the following roads is required. All roads shall be abandoned in accordance with this Road Plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
D-3543	0+00 to 1+65	Light
D-3544	0+00 to 1+29	Light

1.1-3

Construction of the following roads is not required. Roads used by the Purchaser shall be constructed on the State's location and in accordance with this Road Plan.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
D-3543	0+00 to 1+65	Construction
D-3544	0+00 to 1+29	Construction

1.1-4

If the Purchaser desires a road location or design change, a revised Road Plan shall be submitted to the State for consideration.

1.1-5

On this plan quantities are minimum acceptable values. Additional quantities required by the State because of hidden conditions or Purchaser's choice of construction season or techniques shall be at the Purchaser's expense. Hidden conditions include, but are not limited to: solid subsurface rock, subsurface springs, saturated ground, and unstable soil.

1.2-1

The construction, reconstruction, or pre-haul maintenance of any roads specified herein shall not be permitted between September 30 and May 1 unless authority to do so is granted, in writing, by the Contract Administrator.

1.2-2

Purchaser shall not use roads constructed, reconstructed, or pre-haul maintained under this Road Plan for hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1.2.1-1

Pioneering shall not extend past construction that will be completed during the current construction season. Drainage shall be provided on all uncompleted construction as approved, in writing, by the Contract Administrator.

Clearing and grubbing shall be completed prior to starting excavation and embankment.

Subgrade and ditches shall be completed and are subject to written approval by the Contract Administrator prior to rock application and/or timber haul.

1.3-1A

Hauling shall be suspended when wheel track rutting exceeds 6 inches unless Purchaser elects to correct the situation at his/her own expense. Corrective measures and continued operations are subject to written approval by the Contract Administrator.

1.4-3

Reference points (R.P.'s) that are moved or damaged at any time during construction shall be reset in their original locations by the Purchaser. Excavation and embankment shall not proceed on road segments controlled by said R.P.'s until all moved or damaged R.P.'s are reset.

1.5-1

Maintenance on roads listed in Contract Clauses C-50 (Purchaser Road Maintenance and Repair) and C-60 (Designated Road Maintainer) shall be performed in accordance with Forest Access Road Maintenance Specifications.

SECTION 2 - CLEARING

2.1-1

Fell all vegetative material larger than 2 inches DBH or over 5 feet high between the marked right-of-way boundaries or if not marked in the field, between clearing limits specified on TYPICAL SECTION SHEET.

SECTION 3 - GRUBBING

- 3-1 All stumps shall be removed that fall between grubbing limits shown on the TYPICAL SECTION SHEET. Those outside the grubbing limits but with undercut roots shall also be removed.
- 3-2 Grubbing limits are defined as the entire area between the external limits shown on the TYPICAL SECTION SHEET.

SECTION 4 - DEBRIS DISPOSAL AND REMOVAL

- 4.1-1 Right-of-way debris is defined as all nonmerchantable vegetative material larger than one cubic foot in volume within the grubbing limits.
- 4.1-2 All right-of-way debris disposal shall be completed prior to the application of rock and/or timber haul.
- 4.2.3-3 Right-of-way debris shall not be placed against standing timber.
- 4.2.3-4 Right-of-way debris shall be scattered outside the grubbing limits.
- 4.3-1 On the following road, vegetative material including limbs up to 3 inches in diameter shall be cut and removed as shown on the BRUSHING SECTION DETAIL. Vegetative material shall be cut as near flush with the ground as possible, but shall not extend more than 3 inches above the ground.

<u>Road</u>	<u>Stations</u>
D-3500	45+75 to 56+38

SECTION 5 - EXCAVATION

- 5.1-1 Roads shall be constructed, reconstructed, or pre-haul maintained in accordance with dimensions shown on the TYPICAL SECTION SHEET.
- 5.1-3 Road grade and alignment shall conform to the State's marked location. Grade and alignment shall have smooth continuity without abrupt changes in direction. Maximum grades are: 18 percent favorable and 12 percent adverse. Minimum radius curve is 60 feet.
- 5.1-4 Minimum extra widening on the inside of curves shall be:
- | | |
|--------------|-----------------------------|
| 5 feet extra | 80 to 100 foot radius curve |
| 7 feet extra | 60 to 80 foot radius curve |
- 5.1-5 Curve widening, where required, shall be added to the inside of curves.
- 5.1-7 Roads shall be constructed, reconstructed, or pre-haul maintained to the dimensions shown on the TYPICAL SECTION SHEET, within the tolerance listed below. Tolerance classes for each road are listed on the TYPICAL SECTION SHEET.

<u>Tolerance Class</u>	<u>A</u>	<u>B</u>	<u>C</u>
Road Width (feet)	+1.5	+1.5	+2.0
Subgrade elevation (feet +/-)	0.5	1.0	2.0
Centerline alignment (feet lt./rt.)	1.0	1.5	3.0

5.1-8
Excavation slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Excavation Slope Ratio</u>
Common Earth (on side slopes of 55%)	1:1
Common Earth (55% to 70% sideslopes)	¾:1
Common Earth (on slopes over 70%)	½:1
Fractured or loose rock.....	½:1
Hardpan or solid rock.....	¼:1

5.1-9
Excavation and embankment slopes shall be constructed to a uniform line and left rough for easier revegetation.

5.1-10
Embankments shall be widened as follows:

<u>Height at Centerline</u>	<u>Subgrade Widening</u>
Less than 6 feet	2 feet
6 feet or over	4 feet

5.1-11
Embankment slopes shall be constructed no steeper than shown on the following table:

<u>Material Type</u>	<u>Embankment Slope Ratio</u>
Common Earth and Rounded Gravel.....	1½:1
Angular Rock.....	1¼:1
Sandy Soils	2:1

5.1-12
Organic material shall be excluded from embankment.

5.1-15B
Waste material may be deposited adjacent to the road prism on side slopes up to 45 percent if the waste material is compacted and more than 100 feet away from live streams. On side slopes between 45 and 55 percent, all excavation not needed for embankment shall be end hauled or pushed to designated embankment sites. On side slopes of 55 percent or more, all excavation shall be end hauled or pushed to designated embankment sites. All waste embankments shall be compacted in layers not exceeding 2 feet.

5.1-15C
When constructing landings, waste material and embankment shall not be placed on side slopes steeper than 45%.

5.1-22
Waste material shall not be deposited within 100 feet of a live stream.

5.1-23
Turnout locations noted on this plan are approximate. Locations shall be adjusted to fit with final subgrade alignment and sight distances. Location shall be subject to written approval of the Contract Administrator.

5.1-25
Turnarounds shall be no larger than 30 feet long and 30 feet wide. Location shall be subject to written approval of the Contract Administrator.

5.3-1
All embankment and waste material shall be compacted. The minimum acceptable compaction is achieved by placing embankments in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts.

5.4-1
Silt-bearing runoff shall not be permitted to go into streams.

5.4-2
Accomplish sediment removal through silt traps, silt fences, settling ponds, or other methods as approved, in writing, by the Contract Administrator.

5.4-3A

On the following roads, Purchaser shall furnish and evenly spread the seed mixture listed below on all exposed soil inside the grubbing limits at a rate of 40 pounds per acre. The date of application is subject to approval by the Contract Administrator.

<u>Mixture Percent by Weight</u>	<u>Minimum Percent Germination</u>
50% Fescue, Red	90% Germination
25% Ryegrass, Perennial	90% Germination
15% Bentgrass	85% Germination
10% Clover, White and White Dutch (inoculated)	90% Germination

Weed seed shall not exceed 0.5% by weight.

Seed shall be furnished in standard containers on which the following shall be shown:

- 1. Common name of seed
- 2. Net weight
- 3. Percent of purity
- 4. Percentage of germination
- 5. Percentage of weed seed and inert material

Required seed not spread by the termination of this contract shall become property of the State.

<u>Road</u>	<u>Stations</u>	<u>Seed Quantity (lbs)</u>
D-3500	0+00 to 56+38	70
D-3543	0+00 to 1+65	5
D-3544	0+00 to 1+29	5

5.5-4

Constructed subgrades shall be compacted full width except ditch prior to rock application. Compaction shall be by a smooth-drum vibratory roller weighing at least 14,000 pounds. Four complete passes shall be made at a maximum operating speed of 3 mph.

5.5-5

Finished subgrade shall be crowned as shown on the TYPICAL SECTION SHEET, and shall be uniform, firm, rut-free, and shaped to ensure surface runoff in an even, unconcentrated manner.

5.5-6

On the following road, a grader shall be used to shape the existing surface and the surface shall be compacted full width except ditch. Compaction shall be by smooth-drum vibratory roller weighing at least 14,000 pounds. Four complete passes shall be made at a maximum operating speed of 3 mph.

<u>Road</u>	<u>Stations</u>
D-3000	0+00 to 50+83

SECTION 6 - DRAINAGE

6.3-1

Ditches shall be constructed concurrently with construction of the subgrade. Ditches shall drain to culverts, ditchouts, and natural drainages.

6.3-2E

On the following roads, the Purchaser shall clean ditches and clean the inlet and outlet of all culverts. Work shall be completed prior to grading and compaction of the existing surface and shall be done in accordance with the TYPICAL SECTION SHEET.

<u>Road</u>	<u>Stations</u>
D-3000	0+00 to 50+83
D-3500	0+00 to 56+38

SECTION 7 - ROCK

7.1-1C

Rock for construction and reconstruction under this contract may be obtained from any commercial source as approved in writing by the Contract Administrator.

7.2.1-4

1½ INCH MINUS CRUSHED and 4 INCH IN PLACE rock shall meet the following specifications for gradation when placed in hauling vehicles. The exact point of evaluation for conformance to specifications will be determined by the Contract Administrator.

7.2.1.1-3

1½ INCH MINUS CRUSHED ROCK

% passing 1½" square sieve	100%
% passing 1" square sieve	70 - 90%
% passing ¾" square sieve	50 - 80%
% passing ½" square sieve	30 - 50%
% passing U.S. #40 sieve	3 - 18%
% passing U.S. #200 sieve	7.5% Max

All percentages are by weight.

The portion of ballast retained on ¼ inch sieve shall not contain more than 0.1 percent vegetative debris or trash.

7.2.1.1-7D

4 INCH IN PLACE ROCK

% of top 4 inches passing 4" square	90% Min
% passing U.S. #40 sieve	16% Max.
% passing U.S. #200 sieve	7% Max.

All percentages are by weight.

The portion of ballast retained on ¼ inch sieve shall not contain more than 0.1 percent vegetative debris or trash.

7.2.1.1-9

Landing rock shall be no coarser than 6 INCH MINUS.

7.2.1.2-1

A minimum of 50% by weight of coarse aggregate shall have at least one fractured face. Coarse aggregate is that which is retained on a ¼ inch sieve and above.

7.2.3-1A

Measurement of the 1½ INCH MINUS CRUSHED and 4 INCH IN PLACE rock shall be on scaled truck volume. Scaled volume shall be provided by a commercial scale. The Contract Administrator shall be provided with all scale sheets.

7.4.2-1

Apply at least the minimum required rock quantity as shown on ROCK LIST. Required and optional rock shall meet the specifications on the ROCK LIST.

7.4.2-1C

On the following road, if hauling will take place only from May 1 to September 30, Purchaser may not be required to place or provide the optional rock in the ROCK LIST. Purchaser will then be required to submit a written plan for approval by the Contract Administrator describing how these roads will be constructed, used, and abandoned in compliance with all other clauses in the ROAD PLAN.

<u>Road</u>	<u>Stations</u>
D-4543	0+00 to 1+65
D-4544	0+00 to 1+29

7.4.2-3B

On the following road, a grader shall be used to shape the existing surface. Compaction shall be by smooth drum vibratory roller weighing at least 14, 000 pounds. Four complete passes at a maximum speed of 3 mph shall be made on each lift.

<u>Road</u>	<u>Stations</u>
D-3500	0+00 to 56+38

7.4.2-7

Turnarounds, turnouts, and curve widening shall have rock applied to the same depth and specifications as the traveled way.

7.4.2-8

Each lift of rock shall be crowned as shown on TYPICAL SECTION SHEET, and shall be uniform, firm, rut-free, and shaped to ensure surface runoff in an even, unconcentrated manner.

7.4.3-1

On the following road, rock shall be mixed, compacted, and graded in sections not to exceed ½ mile in length. Water shall be added in quantities to facilitate compaction. If directed by the Contract Administrator, a minimum of 6 gallons of water per cubic yard of rock shall be applied.

<u>Road</u>	<u>Stations</u>
D-3500	0+00 to 56+38

7.4.3-2

On the following road, rock shall be spread and compacted full width in one lift not to exceed 12 inches uncompacted depth. Compaction shall be by smooth drum vibratory roller weighing at least 14,000 pounds. Four complete passes at a maximum speed of 3 mph shall be made on each lift.

<u>Road</u>	<u>Stations</u>
D-3500	0+00 to 56+38

SECTION 9 - ROAD AND LANDING DEACTIVATION

9.2-1

Purchaser shall reduce or relocate landing debris, in a manner approved, in writing, by the Contract Administrator, to avoid landing failures and potential debris slides.

9.2-2

Purchaser shall provide for drainage of the landing surface as approved, in writing, by the Contract Administrator.

9.2-3

Landing embankments shall be sloped to original construction specifications.

SECTION 10 - ROAD AND LANDING ABANDONMENT

10.1-1

The following roads shall be abandoned by the Purchaser prior to the termination of this contract.

<u>Road</u>	<u>Stations</u>	<u>Type</u>
D-3543	0+00 to 1+65	Light
D-3544	0+00 to 1+29	Light

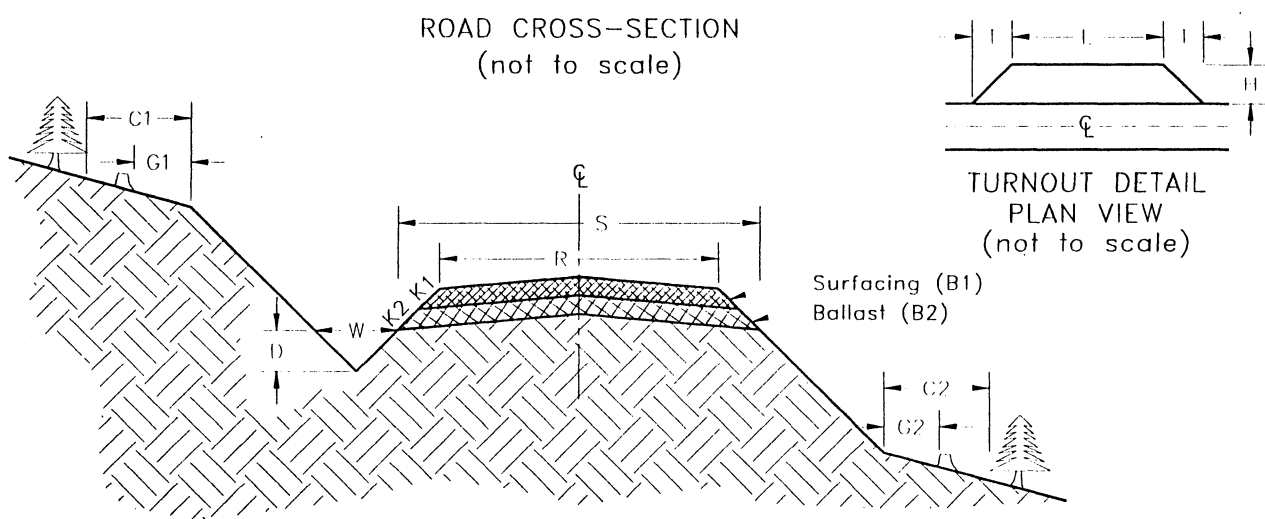
10.1-1A

Light Abandonment shall consist of:

- constructing non-drivable water bars in conformance with the attached NON-DRIVABLE WATER BAR DETAIL at a maximum spacing which will produce a vertical drop of no more than 10 feet between water bars or between natural drainage paths and with a maximum spacing of 100 feet;
- skewing water bars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3% grade;
- keying water bars into ditchline;
- construction of tank trap barriers in conformance with the attached "T" TANK TRAP DETAIL;
- grass seeding concurrently with abandonment and in accordance with Clause: 5.4-3A.

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ROCK LIST



BALLAST

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Subtotal	Rock Source	Turnout		
									Length	Width	Taper
			K2	B2					L	H	T
*D-3543	0+00	1+65	1½:1	10"	44	1.65	73	Commercial Source			
	*Landing (1)						50				
*D-3544	0+00	1+29	1½:1	10"	44	1.29	57				
	*Landing (1)						50				

4 INCH IN PLACE TOTAL 230 Cubic Yards

SURFACE

Road Number	From Station	To Station	Rock Slope	Compacted Rock Depth	C.Y./ Station	# of Stations	C.Y. Total	Rock Source
			K1	B1				
D-3500	0+00	56+38	1½:1	6"	1½ INCH MINUS CRUSHED			Commercial Source
					30	56.38	1,691	
					30	3.00	90	
							50	

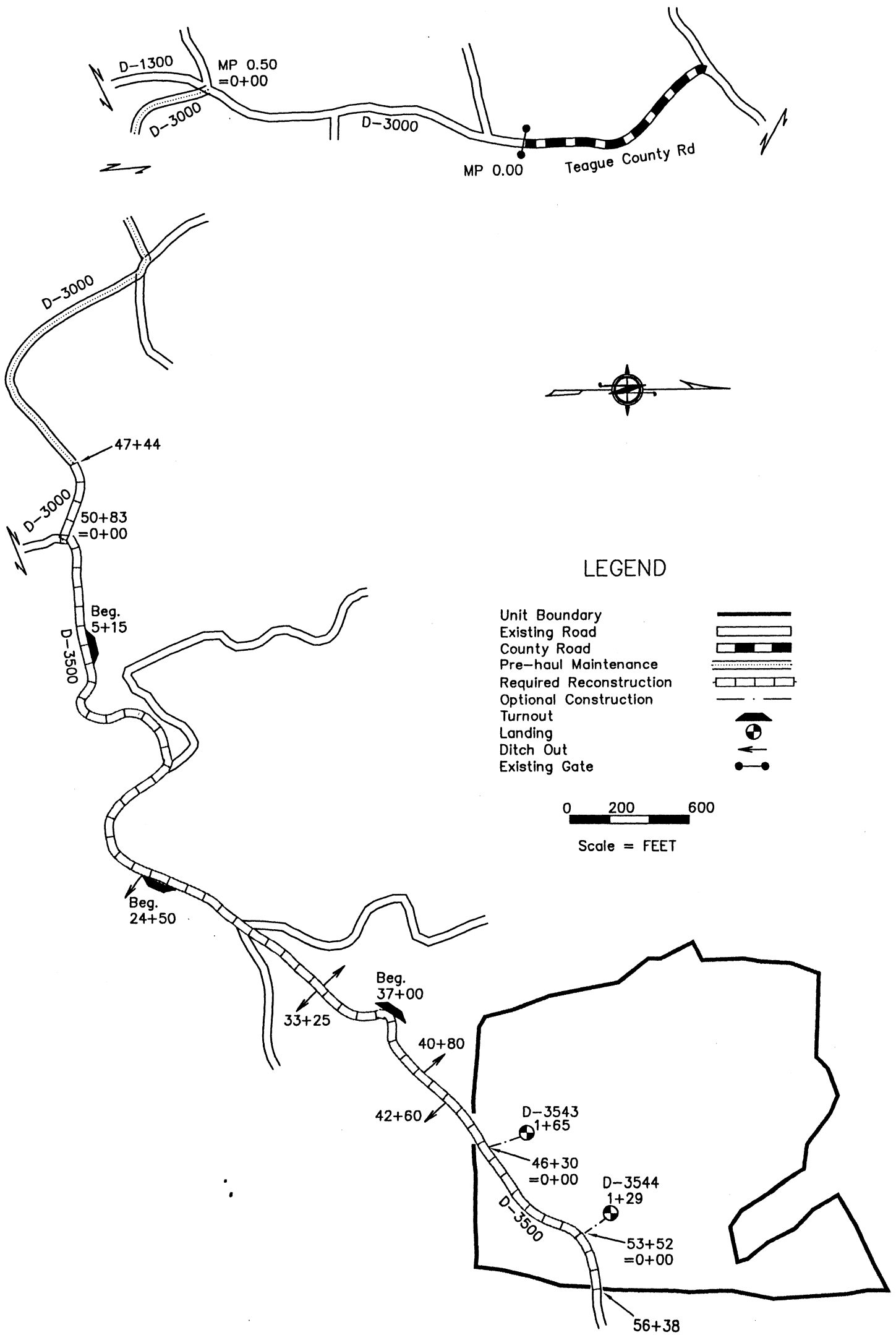
*Optional Rock: according to clause 7.4.2-1C

1½ INCH MINUS CRUSHED TOTAL 1,831 Cubic Yards

If Purchaser elects to haul on optional rock roads in wet weather, the depth listed above is recommended but not required.

TRAPPER

ROAD PLAN MAP



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

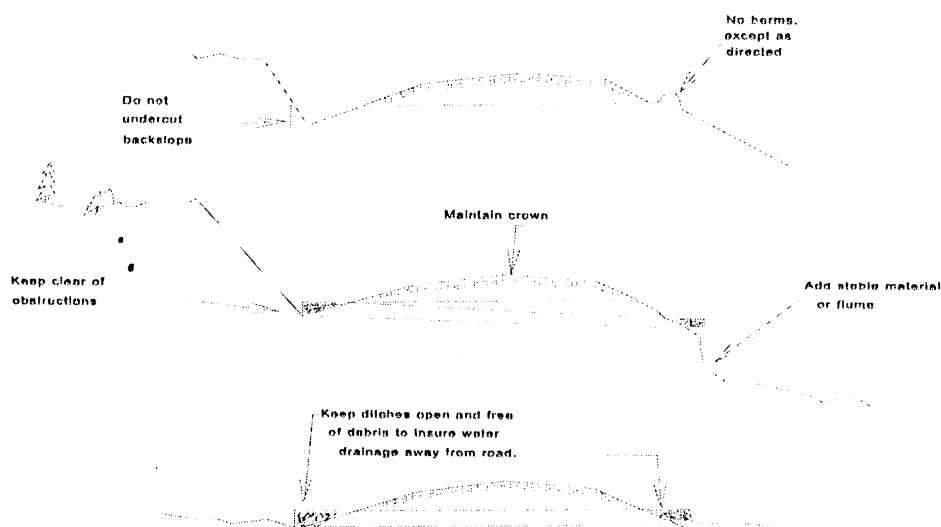
FOREST ACCESS ROAD
MAINTENANCE SPECIFICATIONS

1. CONSTRUCTION AND RECONSTRUCTION (Prior to acceptance to the contract or acceptance on a timber sale).
 - A. Cuts and Fills
 1. Maintain slope lines as constructed. Remove slides from the ditches and roadway. Replace fills to 1½:1 slopes with selected material or as directed. Remove overhanging material from the cut slopes.
 2. Material from slides or other sources requiring removal shall not be deposited in streams or at locations where it will erode into streams or water courses.
 3. Undesirable slide materials and debris shall not be mixed into the surface material.
 - B. Surface
 1. Grade and shape the road surface, turnouts, and shoulders to the original crown, inslope or outslope as directed to provide suitable traveled surface and surface water runoff in an even, unconcentrated manner.
 2. Blading must not undercut the backslope at the bottom of the ditchline or cut geotextile at centerline.
 3. Watering may be required to control dust and to retain fine surface rock.
 4. Desirable surface material shall not be bladed off the roadway.
 5. Replace surface material lost or worn away.
 6. Remove berms except as directed by the State.
 7. Barrel spread soft spots to prevent degradation of geotextile.
 - C. Drainage
 1. Keep ditches and drainage channels at outlets and inlets of culverts clear of obstructions and functioning as intended.
 2. Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This must be done even during periods of inactivity.
 3. Add stable material at the outlet end of the culvert as needed to stabilize the stream bed.
 4. Headwalls: maintain to the road shoulder level with material that will resist erosion.
 5. Keep silt bearing surface runoff from getting into live streams.
 - D. Structures

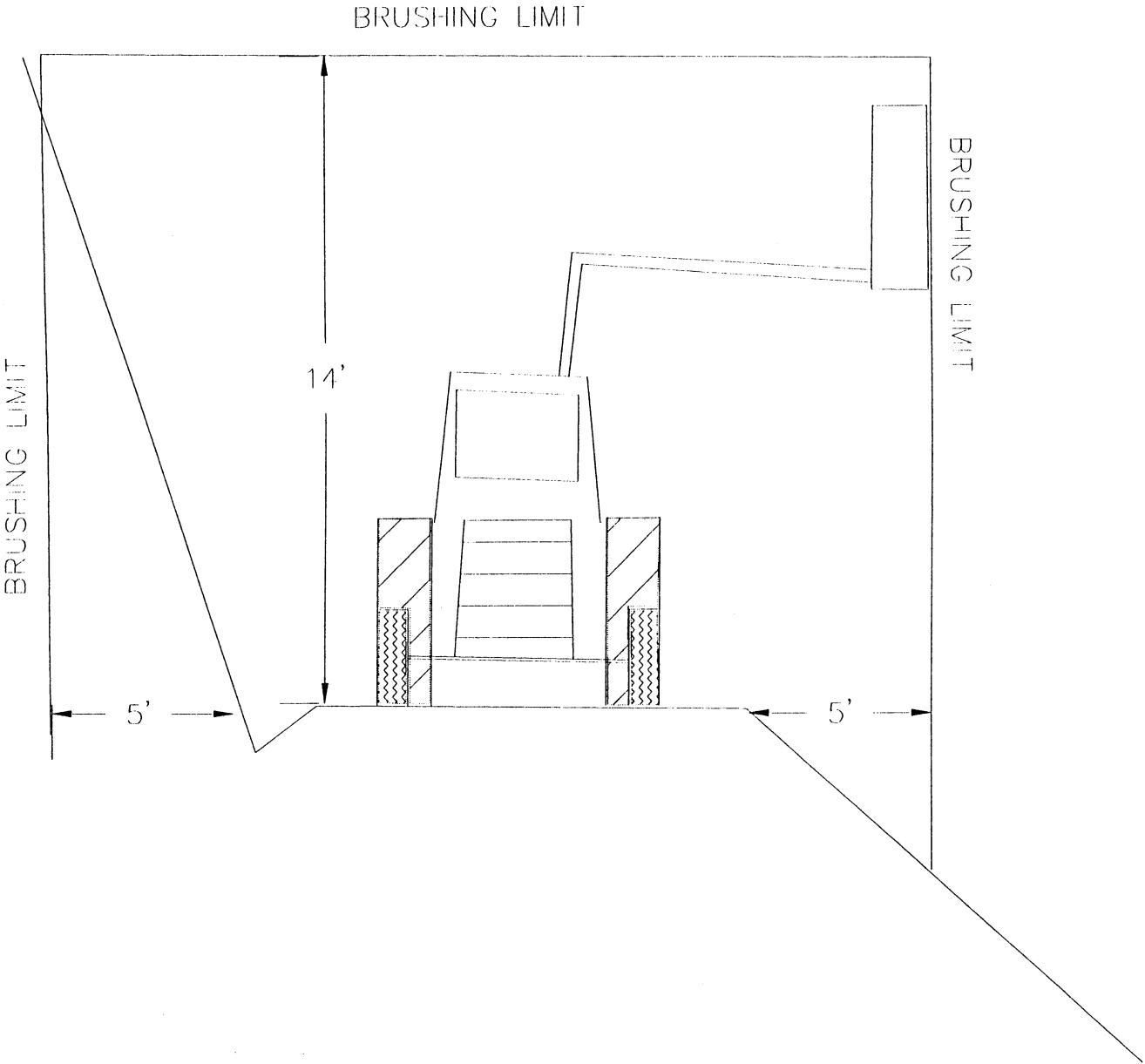
Repair bridges, culverts, cattleguards, fences, and other road structures to the condition required by the construction specifications.
 - E. Termination of Use or End of Season

Do maintenance work to minimize damage from the elements such as blading to insure correct runoff, ditch, and culvert cleaning and water bars.
 - F. Debris

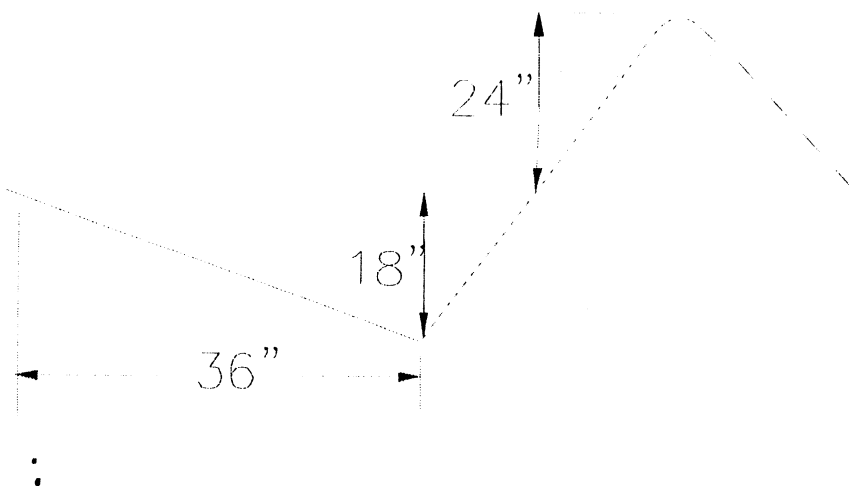
Remove fallen timber, limbs, and stumps from the slopes or roadway.



BRUSHING SECTION DETAIL



NON-DRIVABLE WATER BAR DETAIL



"T" TANK TRAP DETAIL

